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Telephone Support During Overseas Deployment for Military Spouses
Formerly: Telephone Support During Deployment for OEF/OIF Spouses

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CONTRACTING ORGANIZATION: VA Medical Center
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13. SUPPLEMENTARY NOTES

14. ABSTRACT

Deployment impacts both service member and family, and the cost can be high. Spouses' reactions to deployment may include emotional distress, loneliness, anticipatory fear or grief, somatic complaints, and depression. The goal is to help spouses learn ways to manage stress and solve problems related to deployment and reintegration, communication, managing long distance relationships, and other common problems. The study compared telephone support groups to online education sessions for 161 spouses. In the Telephone Support groups, a group leader and participants 12 times over six months to focus on education, skills building and support. Education Only online sessions provided the same education content, without skills building or support. Content included strategies to reduce or eliminate communication difficulties, how to find help; practical concerns; fostering resilience and decreasing stress; fostering relationships while apart, negotiating roles and relationships; changes during deployment; strategies to support the spouse and the service member; and cues to alert spouses when to seek mental health services for the family or themselves. All participants significantly improved in resilience, depression, anxiety, and coping. There was no difference between arms in resilience or depression. Webinar participants significantly improved in anxiety and showed a trend toward improved coping. Both groups reported self-efficacy as a driver of benefit. For webinar participants, there was no effect for dosage. For support group participants, more sessions attended led to significantly improved anxiety, and trends toward improved resilience, depression, and coping.

15. SUBJECT TERMS

Spouses, social support, stress disorders, communication, combat disorders

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Table of Contents

INTRODUCTION:

Deployment impacts both service member and family, and the cost can be high. Spouses' reactions to deployment may include emotional distress, loneliness, anticipatory fear or grief, somatic complaints, and depression. Spouses may also be stressed by single-parenting, learning skills such as home repairs, making decisions alone, and lack of communication with the service member. Assistance during deployment can also help with reintegration post deployment. This randomized clinical trial examined two interventions designed to help spouses manage deployment and prepare for reintegration. The study enrolled 161 spouses/significant others. In the Telephone Support groups, a group leader and participants met 12 times over six months to focus on education, skills building and support. Education Only online sessions provided the same education content, without skills building or support. Content included strategies to reduce or eliminate communication difficulties, how to find help; practical concerns; fostering resilience and decreasing stress; fostering relationships while apart, negotiating roles and relationships; changes during deployment; strategies to support the spouse and the service member; and cues to alert spouses when to seek mental health services for the family or themselves.

All participants showed significant improvement in resilience, depression, anxiety, and coping. There was no difference between arms in resilience or depression. Webinar participants significantly improved in anxiety and showed a trend toward improved coping. Both groups reported self-efficacy as a driver of benefit. For webinar participants, there was no effect for dosage. For support group participants, more sessions attended led to significantly improved anxiety, and trends toward improved resilience, depression, and coping.

A second no cost extension was requested and granted, extending the project through March 2017 in order to develop dissemination materials. An e-learning contractor has been identified and two former Deployed staff members are being hired to work with the contractor. Proposed SOW for Task 10 is shown in Appendix.

BODY:

Completed Tasks
Task 1: Develop Manual of Operations (MOP) – completed Year 1, April, 2011– March, 2012
Task 2: Obtain IRB and HRPO approval – Completed, Year 1, April, 2011– March, 2012, Q3, October-December, 2011
Task 3: Print approved materials– Completed, Year 1, April, 2011– March, 2012, Q3, October-December, 2011
Task 4: Hire and train personnel – Initially Completed Year 1, April, 2011 – March, 2012; Replacement staff hired and trained Year 2, April, 2012 – March, 2013, Q6, July – September, 2012
Task 5: Recruit and Randomize – 161 spouses recruited and randomized, half in each arm, 227 screened. Completed December, 2013
Task 6: Intervention 1 (Telephone Support Groups) –Telephone support groups provided. Completed May, 2014.
Task 7: Intervention 2 (Online Education/Webinar Sessions) – Webinar sessions

provided. Completed June, 2014.	
Task 8: : Data Collection/Data Entry/Cleaning - 161 baselines collected, 137 6 month follow-ups, 125 12 month follow-ups, and 98 project evaluations collected. Data collection completed December, 2014. All data entry and cleaning completed February, 2015.	
	Year 5, April, 2015 – March, 2016
Tasks and Activities	**Progress**
Task 9: Data Analysis	
9.a Analyze Data	
Milestone 9(a) Completed data analysis	• Analyses completed for two manuscripts (see Appendices)

Participants:

The 161 spouses were predominantly wives (98%), in their mid-30s. On average, they had been married 9 years with 1.6 children. They were well educated (15 years education) and 55% were employed. The majority were Caucasian/White (80%) with 16% being Hispanic/Latina. Clinically, at baseline, their health was good and they had low depression and anxiety, good resilience, and coping skills. Their service members were also in their mid-30s, with 26% National Guard/Reserve and 65% non-commissioned officers. During their 3.4 total deployments (including the current one), of which 2 were in Iraq or Afghanistan, 20% had been injured.

Three items were reported most frequently by spouses as military family life stressors: increased time the service member spends away from the family, uncertainty about future deployments, and difficulty balancing family life and military duties (Table 1, Appendix).

Study Results – Support Group and Webinar Participants

During six months, participants in both arms improved significantly for all outcomes (Table 2, Appendix). Webinar participants showed significantly more improvement during six months than support participants for anxiety, and there was a trend toward a significant group by time interaction effect for personal coping.

Dosage had no significant effect on webinar participants. With more support group sessions, support participants had significantly improved anxiety ($b = -.39$, $r2 = .10$, $p = .006$), and trends toward improved resilience ($b = .50$, $r2 = .05$, $p = .073$), depression ($b = -.26$, $r2 = .04$, $p = .081$), and personal coping ($b = -.25$, $r2 = .05$, $p = .052$). Attending 10 support group sessions led to an almost 20% improvement in anxiety score.

Participant Self-Reported Benefit

Several kinds of benefit were reported. Support arm spouses reported support from others; spouses in both arms felt supported by the military because it was providing the study. Improved self-efficacy was also reported by participants in both interventions. As expected, support was an important benefit for support group participants. Participants appreciated the normalizing of their reactions. As one participant said: "*Enjoyed connecting, knowing I am not crazy for some of the issues taking up real estate in my head.*" Other spouses reported that they had no support

at home, so the support groups filled a need: "*I don't have a lot of support here, I'm by myself. I figured it out the whole time while he was gone, which his training was a year and a half, I actually interacted like four times on a human level with other people. … So not having any support at home, it was good to have something*."

Another benefit for participants in both groups was feeling connected to the military and glad that the military cared about the family. As one spouse said: "*It also felt good to know that someone cares about the family left behind. Most resources are for the soldiers, as it should be. It's nice to have resources for us too*."

Self-efficacy was the most important issue for spouses in both study arms, with spouses focusing on their improved ability in coping skills and managing their stress. Participants in both arms reported that resources and learning stress management and other coping techniques and skills were benefits. As one webinar spouse said: "*The study really kept me occupied and I learned new things about how to cope. The video sessions, especially what I did, were really helpful. It really did put things in perspective kind of like that book <u>What to Expect When You Are Expecting</u>, it was just kind of a walk through for the deployment*."

Although skills for themselves were important, spouses also used their newly found skills for others. As one webinar participant said: "*It made me feel good to be involved in something like this while my husband was deployed because it meant I could help other people …I taught everybody I know how to do that* [breathing relaxation exercise] . *I even taught my 7 year old the other day.*"

Webinar participants discussed the benefit for their husbands, either through their understanding of their husband's responses or their working with their husbands using what they had learned. Only two support group participants mentioned benefit to their family or husband, but ten webinar participants did so. Benefits could be indirect, as in the spouse coping better. *It taught me how to stay in touch with him even though we weren't together. It gave me great tools to use in order to communicate better with one another instead of just playing the blame game*." A direct benefit was involvement of the service member in doing homework. "*Also, it was nice because I could talk to my husband about it as well. So, we would do some of the homework things. We would do them together sometimes. It was helpful for not just me but my husband as well*."

Decision Making and Communication During Deployment

Spouses were asked about communication methods and decision making strategies reported by military spouses of service members who were deployed. Spouses were asked what communication methods were used while the service member was deployed and how satisfied they were with each method. For each of eight methods (e.g., letters, email, videoconferencing, blogging) spouses were asked how often each was used and satisfaction level for each method used.

Almost ¾ of spouses (70.2%) reported having problems communicating with their service member during deployment, and 79.5% reported that communication was moderately or very

stressful. Common methods of communication were email and telephone (Table 3, Appendix) and spouses were satisfied with these methods. For those who used them, all but two communication methods averaged weekly use; letters and other methods were used approximately monthly. There were age differences in methods of communication. Spouses who used text messages were older (37.4 years $\pm$ 8.2 vs. 33.9 years $\pm$ 7.9, $p = .007$). The same was true for video conferencing (36.3 years $\pm$ 8.1 vs. 33.3 years $\pm$ 8.1, $p = .037$). Spouses who communicated through social networking sites were younger (34.3 years $\pm$ 8.0 vs. 37.7 years $\pm$ 8.2, $p = .010$).

For decision making, spouses were asked how decisions were made while the service member was home and during deployment. Decisions included minor household decisions (e.g., fixing the washing machine), major household decisions (e.g., replacing a car), financial decisions (e.g., budget, debt repayment), and decisions about children (e.g., medical, educational, discipline). For the four types of decisions studied, there were statistically significant differences between decision making responsibility while the service member was at home versus during deployment (Table 4, Appendix). Specifically, spouses reported taking more responsibility during deployment, with decisions made together decreasing. They further reported that, except for minor household decisions, service member primary responsibility in decision making was not significantly different between home and deployment.

Some spouses reported that their decision making was the same during deployment and at home. Accordingly, for minor household decisions 27.8% of couples made decisions the same way at home and deployment; for major household decisions 65.8%; for financial decisions 55.0%; and for decisions about children 38.4%.

Task 10: Prepare and Disseminate Results	
10.a Prepare papers and presentations	• 2 presentations • 2 presentations submitted • 1 manuscript published • 1 manuscript submitted • 1 manuscript in preparation
10.b Develop protocol for dissemination	• See expanded SOW in Appendix
Milestone 10b Manuals and materials for dissemination to DoD and VA	

KEY RESEARCH ACCOMPLISHMENTS:

- During six months, participants in both arms improved significantly for all outcomes.
    - Webinar participants showed significantly more improvement during six months than support participants for anxiety, and there was a trend toward a significant group by time interaction effect for personal coping.
    - Dosage had no significant effect on webinar participants.

- With more support group sessions, support participants had significantly improved anxiety, and trends toward improved resilience, depression, and personal coping.
- Attending 10 support group sessions led to an almost 20% improvement in anxiety score.

- Several kinds of benefit were reported.
  - Support from others
  - Support from the military
  - Feeling connected to the military
  - Self-efficacy – improved ability in coping skills and managing stress.
  - Resources
  - Use of skills for others, including service member

- ¾ of spouses (70.2%) report having problems communicating with their service member during deployment
  - 79.5% report that communication is moderately or very stressful

- Common methods of communication are email and telephone

- There are age differences in methods of communication
  - Spouses who used text messages and video conferencing are older
  - Spouses who communicate through social networking sites are younger

- There are statistically significant differences between decision making responsibility while the service member is at home versus during deployment
  - Spouses take more responsibility during deployment, with decisions made together decreasing.
  - Except for minor household decisions, service member primary responsibility in decision making is not significantly different between home and deployment.

- Many couples make decisions the same way during deployment and at home
  - 27.8% of couples the same for minor household decisions
  - 65.8% of couples the same for major household decisions
  - 55.0%of couples the same for financial decisions
  - 38.4%of couples the same for decisions about children

REPORTABLE OUTCOMES:

- 2 presentations
- 2 presentations submitted
- 1 manuscript published
- 1 manuscript submitted
- Intern hired as staff member of Memphis Caregiver Center to provide training on delivering Telephone Support Groups to VA staff nationwide

Presentations (available upon request)

- Nichols, L.O., Martindale-Adams, J. Facilitating Telephone Support Groups for Caregivers of Veterans. National VA training, May 13, 2015.
- Nichols, L.O., Martindale-Adams, J. Telephone Support during Overseas Deployment for Military Spouses. VA Memphis Research Service, January 8, 2016
- Martindale-Adams J, Nichols LO, Zuber J, Graney MJ, & Burns R. Decision Making Responsibility for Service Members and Spouses During and Post Deployment. Submitted, Military Health System Research Symposium, 2016.
- Nichols LO, Martindale-Adams J, Zuber J, Graney MJ, Burns R, & Clark C. Distance Strategies for Supporting Spouses of Deployed Service Members. Submitted, Military Health System Research Symposium, 2016.

Manuscripts (available upon request, attached in Appendix)

- Martindale-Adams J, Nichols LO, Zuber J, Graney MJ, & Burns R. Decision Making During the Deployment Cycle. The Family Journal, 2016. DOI: 10.1177/1066480716648686.
- Nichols LO, Martindale-Adams J, Zuber J, Graney MJ, Burns R, & Clark C. Supporting Spouses of Service Members During Deployment. Military Behavioral Health, special issue, submitted 4/2016.

CONCLUSION:

Deployment can have negative consequences for military spouses/partners and military organizations may struggle to find ways to help them. This study tested two means of providing assistance to spouses/significant others: telephone support groups and on-demand education webinars. During six months, participants in both arms improved significantly for all outcomes of resilience, depression, anxiety, and coping behaviors. Benefit was attributed to support, self-efficacy, improved coping and stress management skills, and resources.

Why are these findings important? Findings suggest multiple avenues can be used to provide support, coping strategies, and resources to help military spouses/partners cope with disruption and change during deployment. Strategies can be dependent on spouse/partner desires, time constraints, learning styles, and agency resources of time, staff, technological acumen, and funding.

For military couples, deployment may influence decision making. With deployment, spouses report that decision making changed significantly for minor household, major household, and financial decisions, and decisions about children. Decision making at home was predominantly as a couple; during deployment more decisions were by the spouse. However, decision making stayed the same at home and during deployment for 1/3 to 2/3 of families, dependent on the type of decision, and these couples tended to make decisions together. Although spouses/partners are not always satisfied with methods of communication, availability of communication methods that allow rapid exchange of information may contribute to couples managing decisions together.

Why are these findings important? These study results provide guidance to both military and community mental health practitioners in supporting the well-being of military families. Post deployment role negotiation and reintegration into the family can be difficult. Before deployment, practitioners should discuss current family decision making and communication patterns and expectations during deployment. During deployment, partners can be encouraged to take on responsibilities that will help build their independence and facilitate smooth functioning of family life. At the same time, encouragement to continue, as much as possible and appropriate, familiar decision making during deployment and at home may help ease the service member's transition from deployment to home.

REFERENCES and SUPPORTING DATA:

See manuscripts in Appendices

APPENDICES:

- Tables
    - Table 1. Baseline Stress of Military Family Life
    - Table 2. Mixed Model Analysis of Outcome Variables
    - Table 3. Baseline Communication Methods While Service Member Deployed
    - Table 4. Decision Making When Service Member (SM) Home and Deployed
- SOW for Dissemination NCE
- Manuscripts
    - Martindale-Adams J, Nichols LO, Zuber J, Graney MJ, & Burns R. Decision Making During the Deployment Cycle. The Family Journal, 2016. DOI: 10.1177/1066480716648686.
    - Nichols LO, Martindale-Adams J, Zuber J, Graney MJ, Burns R, & Clark C. Supporting Spouses of Service Members During Deployment. Military Behavioral Health, special issue, submitted 4/2016.
- Quad chart

Table 1. Baseline Stress of Military Family Life Questions

Variable	n[a]	Moderately or Very Stressful %
All Military		
Increased time SM spent away from fam/friends to perform duties	158	75.3
Uncertainty about future deployments/assignments	155	60.6
Difficulty balancing family life and SM's military duties	146	52.7
Intensified training schedule for SM	143	66.4
Non-combat deployment/assignment with SM away from home	143	65.0
Combat deployment/assignment for SM	142	87.3
Family conflict over whether SM should remain in military	104	42.3
Permanent change of station (PCS)	87	64.4
Non-combat injury to SM from carrying out duties	49	59.2
Caring for your ill, injured, disabled SM	33	57.6
Combat-related injury to SM	22	72.7
Guard and Reserve Only		
Change in family financial situation due to SM's active duty	79	36.7
Concern over SM's employment when deactivated	72	52.8
Unpredictability of when SM will be activated for duty	71	64.8
Concern over continuity of access to healthcare for family	71	46.5

Note: Stress of Military Family Life questions are from the Navy and Marine Stress of Life Index; SM = Service Member.

[a]n = number of spouses reported to have experienced situation

Table 2. Mixed Model Analysis of Outcome Variables, Support Groups and Webinars

Variable	Baseline n = 161 M ± SD	6 Months n = 137 M ± SD	Group *p*-value	Time *p*-value	Group by Time *p*-value
Anxiety (0-21)			.494	<.001	.032
Support	6.0 ± 4.4	5.4 ± 5.1			
Webinar	7.3 ± 5.2	5.0 ± 4.8			
Depression (0-27)			.376	<.001	.198
Support	5.5 ± 4.3	3.8 ± 4.4			
Webinar	6.6 ± 5.5	3.9 ± 4.2			
Resilience (0-100)			.342	<.001	.180
Support	75.4 ± 11.5	78.3 ± 9.4			
Webinar	75.9 ± 11.8	81.0 ± 10.2			
Personal Coping (8-40)			.773	<.001	.075
Support	33.0 ± 3.8	34.5 ± 4.0			
Webinar	32.5 ± 4.6	35.4 ± 4.2			
Family Coping[a] (6-30)			.180	<.001	.128
Support	26.2 ± 3.2	26.8 ± 3.3			
Webinar	26.1 ± 3.9	27.9 ± 2.4			

Note: Anxiety = GAD-7, Depression = PHQ-9, Resilience = CD-RISC, Personal and Family Coping questions from the 1991-1992 Survey of Army Families II in USAR-EUR.

[a] Family Coping is only assessed with participants who have children living in the home. n = 102 and 93 at baseline and 6 months respectively.

Table 3. Baseline Communication Methods While Service Member Deployed (N = 161)

Communication Methods	Total Using %	Usage M ± SD	Moderately or Very Satisfied Using Method %
Email	91.9	3.3 ± 0.8	87.2
Phone calls	90.7	2.8 ± 0.9	84.2
Video conferencing	74.5	2.7 ± 1.0	77.5
Social networking site	62.7	2.8 ± 0.9	78.2
Letters	60.9	1.9 ± 0.8	66.3
Instant messaging	49.1	3.0 ± 0.9	86.1
Text messages	48.4	3.1 ± 1.0	82.1
Other method	6.2	2.0 ± 1.1	90.0
Blogging	1.9	2.7 ± 1.2	0.0

Note: For Usage scale, 1 = at least once every few months, 2 = at least once per month, 3 = at least once per week, 4 = at least once per day. Other methods of communication included sending packages and flowers.

Table 4. Decision Making When Service Member (SM) Home and Deployed

Decisions	**Spouse Decides n (%)**	**Decide Together n (%)**	**SM Decides n (%)**	***p*-value[a]**
Minor household, n=158				$\leq$ .001
Home	40 (25.3)*	92 (58.2)*	26 (16.5)*	
Deployed	123 (77.8)	30 (19.0)	5 (3.2)	
Major household, n=149				$\leq$ .001
Home	9 (6.0)*	123 (82.6)*	17 (11.4)	
Deployed	53 (35.6)	86 (57.7)	10 (6.7)	
Financial, n=160				$\leq$ .001
Home	51 (31.9)*	83 (51.9)*	26 (16.3)	
Deployed	95 (59.4)	48 (30.0)	17 (10.6)	
Children, n=125				$\leq$ .001
Home	35 (28.0)*	89 (71.2)*	1 (0.8)	
Deployed	98 (78.4)	27 (21.6)	0	

[a] *p*-values estimated by McNemar's chi-square test * Bonferroni-adjusted difference of proportions (home vs. deployed) test significant at .05 level.

TELEPHONE SUPPORT DURING OVERSEAS DEPLOYMENT FOR MILITARY SPOUSES
STATEMENT OF WORK (SOW) TASK 10B EXPANDED, 4/1/16-3/31/17
PLUS OPTIONAL TASK 5, 4/1/17-9/30/17

Task 10: Prepare and Disseminate Results

Activities

10.a Prepare papers and presentations

Milestone 10a Papers and Presentations

10.b Develop protocol for dissemination

Milestone 10b Manuals and materials for dissemination to DoD and VA

Task/Activities	**Quarter 1**			**Quarter 2**			**Quarter 3**			**Quarter 4**			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**
	Ap	**Ma**	**Ju**	**Jy**	**Au**	**Se**	**Oc**	**No**	**De**	**Ja**	**Fe**	**Mr**	**Ap**
Task 1: Hire and train personnel													
1.a Write job descriptions	X												
1.b Hire	X												
Milestone 1: Staff hired	X												
Task 2: Update current content, including Spouse Workbook chapters, Support Groups scripts, powerpoints and scripts for e-learning													
2.a Integrate spouses suggestions		X	X										
2.b Integrate new research		X	X										
2.c Edit and rewrite as needed		X	X	X	X	X							
2.d Develop new content		X	X	X	X	X							
2.e Review		X	X	X	X	X							
Milestone 2: Updated content						X							
Task 3: Engage contractor to work with staff on e-learning, including modules and videos													
3.a Engage contractor				X									
3.b Staff update materials				X	X	X	X	X	X	X	X		
3.b Staff work with contractor				X	X	X	X	X	X	X	X		
Milestone 3: E-learning											X		

Task/Activities	Quarter 1			Quarter 2			Quarter 3			Quarter 4			
	1 Ap	2 Ma	3 Ju	4 Jy	5 Au	6 Se	7 Oc	8 No	9 De	10 Ja	11 Fe	12 Mr	13 Ap
Task 4: Develop guidelines for monitored chat room interaction													
4.a Explore existing formats				X	X	X	X						
4.b Develop guidelines						X	X						
Milestone 4: Guidelines							X						
Task 5: Update Manuals													
5.a Write and edit all material										X	X	X	
Milestone 5: Manuals												X	
Task 6: Dissemination													
6.a Identify DoD site to host										X	X	X	
6.b Identify chat room facilitators, if needed										X	X	X	
6.c Identify support group sites										X	X	X	
Milestone 6: Live materials												X	

Optional Task for additional 6 months

Task/Activities	Quarter 5			Quarter 6		
	13 Ap	14 Ma	15 Ju	16 Jy	17 Au	18 Se
Task 7: Test e-learning with monitored chat room interaction, optional (if permitted)						
7.a Develop protocol	X	X				
7.b Obtain IRB approval	X	X				
7.c Recruit spouses to participate		X	X			
7.d Implement			X	X	X	
7.e Interview participants					X	
7.f Integrate findings					X	X
Milestone 7: Complete guidelines						X

Telephone Support During Overseas Deployment for Military Spouses
W81XWH-11-2-0087, 10020008, DHP CSI

PI: Nichols **Org:** VA Medical Center, Memphis TN **Award Amount:** $1,016,828

DMRDP

Study/Product Aim(s)

- Determine satisfaction
- Determine commitment and adherence to therapeutic recommendations
- Determine whether telephone support groups significantly improve outcomes, compared to educational webinars
- Develop a manual for clinical translation

Approach

Randomized clinical trial of 160 spouses, half in each study arm. Compare webinar sessions (the usual standard of care) to more intensive telephone support groups. For the telephone support arm, each group of spouses have 12 one-hour telephone support groups focusing on education, skills building and support over six months. For the education group, spouses viewed online webinars. Data were collected at baseline, 6 and 12 months.

Accomplishments: 1 manuscript in press; 1 submitted, dissemination plan developed and ready for implementation

Timeline and Cost

Study Activities	1 4/11-3/12	2 4/12-3/13	3 4/13-3/14	4 4/14-3/15	5 4/15-3/16	6 4/16-3/17	7 4/17-3/18
Finalize manual, obtain approvals, print materials							
Recruit subjects							
Administer interventions							
Collect, analyze, process and publish data							
Develop materials and disseminate							
Estimated Budget ($K)	$90	$332	$340	$254			

Updated: 14 April 2016

Goals/Milestones

- ☑ Finalized Manual of Operations (MOP) including telephone support group topics and scripts and online education/webinar sessions topics and scripts, screening forms and scripts, data collection forms, scripts and documentation
- ☑ Obtained IRB and HRPO approval
- ☑ Printed approved materials
  - 2500 brochures 190 Workbooks
- ☑ Hired/Trained personnel
- ☑ Recruited, enrolled and randomized subjects (Total: 161 spouses)
- ☑ Administer intervention 1 (telephone support groups)
- ☑ Administer intervention 2 (online education/webinar)
- ☑ Collect, analyze and process data
- ☐ Publish data (1 manuscript in press, 1 manuscript submitted)
- ☐ Dissemination materials developed and publicized

Comments/Challenges/Issues/Concerns

None

Budget Expenditure to date

Projected expenditure: $1,016,828.00 Actual Expenditure: $568,051.92 (as of 03/31/15)

Decision Making During the Deployment Cycle

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Abstract

Many factors influence how individuals and couples make decisions, specifically, who has primary responsibility for a decision. For military couples, deployment may also influence decision making. Decision making at home and during deployment was examined for 161 spouses of service members who were deployed overseas, using baseline spouse reports. Four types of decisions were included: minor household, major household, financial, and decisions about children. Communication methods used during deployment were also examined. With deployment, spouses reported that decision making changed significantly for all four types of decisions. Decision making at home was predominantly as a couple; during deployment more decisions were by the spouse. However, decision making stayed the same at home and during deployment for 1/3 to 2/3 of families, dependent on the type of decision, and these couples tended to make decisions together. Availability of communication methods that allow rapid exchange of information may contribute to couples managing decisions together.

Many military families seek services in the community and community mental health practitioners can support their well-being. Before deployment, practitioners should discuss current family decision making and communication patterns and expectations during deployment. During deployment, spouses can be encouraged to take on responsibilities that will help build their independence and facilitate smooth functioning of family life. At the same time, encouragement to continue, as much as possible and appropriate, familiar decision making during deployment and at home may help ease the service member's transition from deployment to home.

Keywords: spouses, military, communication, roles

Many factors affect how individuals and couples make decisions and who has primary responsibility for decisions. For military spouses and service members, the additional factor of deployment and/or deployment to a combat destination may also affect decision making. For spouses and service members the locus of responsibility may shift during periods of separation when the service member is deployed and periods of togetherness when the service member is at home.

Individual demographic factors and dyad relationship factors can influence decision making. For example, individuals with lower socioeconomic status (SES) may have less education, income, and resources; this lack of resources may lead to negative life events and subsequent poorer decisions (Bruine de Bruin, Parker, & Fischhoff, 2007).

Past decision making experiences influence subsequent decision making (Juliusson, Karlsson, & Gärling, 2005). For dual-career commuter couples, research has shown that household duties can be assigned based on typical gender roles or based on commuting status (Rhodes, 2002). Traditional sex-role norms have defined certain areas as the prerogative of one gender (e.g., groceries – wife; automobile – husband) (Buss & Schaninger, 1983). However, in the U.S. today, women have assumed a more prominent role in family decision making (Belch & Willis, 2002). Military wives are likely to play a similar prominent role in military families with frequent deployments.

Through a process known as outsourcing, one spouse may come to rely on his or her partner to perform more household tasks and handle more day-to-day household chores, such as paying bills, buying groceries and raising children (Solomon & Jackson, 2014). This role in non-military families is likely to be handled by the partner who is more conscientious. However, for military families, both during deployment and between deployments, the non-military spouse is likely to fill this role. This primary decision making role can be stressful (Tollefson, 2008); for example, for Operation Desert Storm spouses a common stressor during the service member's deployment was children's discipline (Rosen, Durand, & Martin, 2000).

Although lack of communication is stressful for military spouses (Tollefson, 2008), communication with home can have both positive or negative effects for the service member (Carter & Renshaw, 2015). Communication can improve mental health and morale, although difficult, stressful, or overwhelming communication can decrease occupational effectiveness (Greene, Buckman, Dandeker, & Greenberg, 2010). Some wives of deployed service members prefer to keep open communication (Cafferky, 2014; Gottman, Gottman, & Atkins, 2011; Merolla, 2010), others censor anything that might be disturbing to the service member (Cafferky, 2014), and others attempt to keep a balance and only disclose important information (Cafferky, 2014; Faber, Willerton, Clymer, MacDermid, & Weiss, 2008). For disclosure of difficult, potentially stressful, or emotionally disturbing information, wives triage whether they should share information, how much information to share, and how to share (Cafferky,

2014; Rossetto, 2013). Wives who perceive that their husbands are in dangerous situations share less stressful information (Cafferky, 2014; Greene et al., 2010; Joseph & Afifi, 2010); wives who perceive that their husbands are supportive share more (Joseph & Afifi, 2010).

Based on these findings, the current study goal was to determine whether military spouses perceived a difference in the couple's decision making when the service member was at home and deployed. We hypothesized that who made decisions would change from home to deployment, especially for decisions related to general household functioning, such as minor repairs, or those that were more time-sensitive, such as children's concerns. Spouses were also asked what communication methods were used while the service member was deployed.

Method

Participants were 161 spouses or significant others living as married of a service member deployed overseas. Spouses were participants in a national randomized controlled trial conducted from 2011 to 2015 to examine strategies to provide support during deployment. The study was funded by Department of Defense (DoD), Defense Health Program and managed by the US Army Medical Research and Materiel Command, Military Operational Medicine Research Program. The study was overseen by the Memphis Veterans Affairs Medical Center Institutional Review Board.

Data and Data Analysis

Spouse self-report data were collected via telephone by trained and certified research specialists. For this analysis, only baseline data were used. There were no currently established instruments available on couple decision making during deployment, so a Household Decisions questionnaire was developed using the U.S. Agency for International Development Demographic and Health Surveys (DHS) Program household decision making survey (Kishor & Subaiya, 2008). The questionnaire focused on the types of decisions being made and who makes the decision.

The Household Decisions questionnaire is 8 items asking about minor household decisions (e.g., fixing the washing machine), major household decisions (e.g., replacing a car), financial decisions (e.g., budget, debt repayment), and decisions about children (e.g., medical, educational, discipline). Each item is asked about both during deployment and while the Service Member (SM) was home. Following DHS guidelines, items are scored as *spouse decides without SM input*, *spouse decides with SM input*, *decide together*, *SM decides with spouse input*, or *SM decides without spouse input*. For analysis, the two "*spouse decides…*" categories were combined as were the two "*SM decides…*" categories resulting in 3 final categories: *Spouse decides*, *decide together*, and *SM decides*.

Spouses were asked what communication methods were used while the service member was deployed and how satisfied they were with each method. For each of eight methods (e.g., letters, email, videoconferencing, blogging) spouses were asked how often each was used, ranging from 0 (*not at all*) to

4 (*at least once per day*). Spouses were asked satisfaction level for each method used, with responses ranging from 0 (*not at all*) to 3 (*very*).

To characterize the sample, demographic data included age, gender, race/ethnicity, years married, employment, number of children, income, and service member's age, military branch, rank, and previous deployments. Descriptive statistics were compiled using either percentages or means with standard deviations, as appropriate. McNemar's chi-square tests were used to compare decisions made while the service member was at home to those made while deployed. To find which proportions were significantly different, home vs. deployed, the Bonferroni-adjusted difference of proportions (home vs. deployed) test was used. Those using/not using communication methods were compared using independent samples t-tests.

Results

Participants

On average, spouse participants were women in their mid-30s, married about 9 years, and with about 2 children at baseline, (Table 1). About 80% were Caucasian, 8% were African-American, and 16% Latina. Spouses had about 3 years of college and more than half were employed. Service members, on average, were in their late 30s (Table 2). Service members had served in the military 13 years, and 45% were Army. Consistent with their military years, they had 3.4 total deployments. In general, they were about 3 months into their current deployment.

- Insert Table 1 and Table 2 about here -

Communication Methods

Almost ¾ of spouses (70.2%) reported having problems communicating with their service member during deployment, and 79.5% reported that communication was moderately or very stressful. Common methods of communication were email and telephone (Table 3) and spouses were satisfied with these methods. For those who used them, all but two communication methods averaged weekly use; letters and other methods were used approximately monthly. There were age differences in methods of communication. Spouses who used text messages were older (37.4 years $\pm$ 8.2 vs. 33.9 years $\pm$ 7.9, p = .007). The same was true for video conferencing (36.3 years $\pm$ 8.1 vs. 33.3 years $\pm$ 8.1, p = .037). Spouses who communicated through social networking sites were younger (34.3 years $\pm$ 8.0 vs. 37.7 years $\pm$ 8.2, p = .010).

- Insert Table 3 about here –

Decisions

For the four types of decisions studied, there were statistically significant differences between decision making responsibility while the service member was at home versus during deployment (Table 4). Specifically, spouses reported taking more responsibility during deployment, with decisions made

together decreasing. They further reported that, except for minor household decisions, service member primary responsibility in decision making was not significantly different between home and deployment.

- Insert Table 4 about here –

Some spouses reported that their decision making was the same during deployment and at home. Accordingly, for minor household decisions 27.8% of couples made decisions the same way at home and deployment; for major household decisions 65.8%; for financial decisions 55.0%; and for decisions about children 38.4%.

Discussion

This study examined communication methods and decision making strategies reported by military spouses of service members who were deployed. Before discussing results, study limitations and areas of future research should be acknowledged. First, data were only collected from spouses and not from service members. Comparison of couples' perceptions of how decision making changed during deployment would provide a more rounded picture. Second, in this sample, the Navy was slightly overrepresented and the Air Force underrepresented, compared to their proportions of all military branches. If one branch has better communication availability, this could affect results. For future studies, expanding this research to couples who are no longer in the military could determine if and when couples' decision making strategies change. The benefits of using one decision making strategy or another would also be a fruitful area for research into couples' perspectives. Finally, qualitative data could deepen insight into decision making, particularly focusing on why and how some couples are able to be more consistent in their decision making strategies.

In general, spouses reported that the couples made decisions together for all four decision types when the service member was at home. With deployment, decision making was significantly different for all four types of decisions. Spouses reported that they were often the decision maker during deployment, with or without input from the service member and service members did not have the level of primary responsibility for any category of decision that spouses had. This finding echoes what is seen in American life today as women assume larger roles in decision making (Belch & Willis, 2002). However, in addition to this national trend, military spouses may choose or accept larger roles in decision making if the service member is deployed or likely to be redeployed, as has been the case with the increased operational tempo of the Iraq and Afghanistan conflicts. For example, 38% of Army soldiers deployed to Iraq from 2003 to 2008 had been deployed more than once and 10% had been deployed three times or more (Shanker, 2008).

Depending on the type of decision, 1/3 to 2/3 of spouses reported that their families' decision making stayed the same for home and deployment. The most frequently reported decision making responsibility was together. Availability of synchronous communication methods (e.g., telephone,

videoconferencing) or those that allow rapid exchange of information (e.g., email, text, instant messaging) no doubt contributes to ability to manage decisions together. In fact, email and telephone calls were common methods of communication. Although fewer than 50% of spouses used text and instant messaging, those who did reported high satisfaction with these methods. The high cost of private cell phone service overseas and/or the military need to control access to communication during crises may explain the low utilization of these two methods of communication.

There are positives and negatives in sharing responsibility. Attempting to involve the service member in every decision may be overwhelming and inefficient, especially for those decisions that need rapid response such as minor repairs and children's discipline. Too much communication with home may make the service member feel distracted and helpless (MacDermid et al., 2005) and decrease occupational effectiveness (Greene et al., 2010). However, keeping the service member involved could maintain the relationship during deployment (Carter & Renshaw, 2015; Merolla, 2012; Rossetto, 2013). Negative consequences for the service member could be minimized if spouses shade their interactions toward the positive due to their hesitancy to share difficult or stressful information when the service member is in danger (Cafferky, 2014; Joseph & Afifi, 2010; Rossetto, 2013).

Further, continuing to involve the service member in decision making may reduce major role negotiation post deployment because the service member has remained part of the family decision making process. A return to former roles and decision making is one of the most difficult tasks couples face post deployment and between deployments, especially for military couples where the service member experiences a long deployment or multiple closely spaced deployments (Gambardella, 2008). Reintegration can be particularly problematic if the at-home spouse has developed new skills and independence. Although skills and independence are critical for the spouse's self-esteem and ability to manage the deployment, they increase the difficulty of successful role negotiation and transition post-deployment (Gambardella, 2008).

Implications for Practice

During and after deployment, many military family members do not participate in formal military programs (Di Nola, 2008). In particular, Guard and Reserve families, because they generally do not live near military bases, and Veteran families, who no longer have access to military care, receive their care from community health and mental health providers (Tanielian et al., 2014). Despite this, many community psychologists have not seen the treatment of military families as part of their mission, perhaps partly due to the assumption that military families will be cared for by the military and a lack of knowledge about military culture (Hoshmand & Hoshmand, 2007).

In a study of community mental health practitioners, including psychiatrists, psychologists, social workers and licensed counselors, only half (50.1%) screen patients to determine military affiliation and

only 47.3% screen about stressors related to military life (Tanielian et al., 2014). However, community practitioners can support the well-being of military families (Hoshmand & Hoshmand, 2007), particularly, military spouses facing deployment of the service member. Before deployment, practitioners should discuss current family decision making and communication patterns and expectations during deployment. Discussing methods of communication can help develop a communication plan during deployment, allowing the couple to express expectations before the deployment. Before and during deployment, practitioners can build upon the dual inclinations of families to both shift responsibility to the spouse and to maintain decision making patterns. At-home spouses can be encouraged to take on responsibilities that will help build their independence and facilitate smooth functioning of family life. At the same time, encouragement to continue, as much as possible and appropriate, familiar decision making during deployment and at home may help ease the service member's transition from deployment to home.

Declaration of Conflicting Interests

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this work.

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Table 1. Baseline Characteristics of Spouses of Deployed Service Members

Variable	**Total n = 161 M ± SD or %**
Female	97.5
Age, years	35.6 ± 8.2
Years married	8.6 ± 7.3
Years cohabitated	9.3 ± 7.3
Children, number	1.6 ± 1.2
Race	
White	79.5
Black	8.1
Native American	1.9
Asian/Pacific Islander	3.7
Other	6.8
Ethnicity, Latino/a	15.5
Education, years	15.2 ± 2.2
Employed, full-time or part-time	55.3
Household income, monthly	6505 ± 7717
Military service	14.9

Table 2. Baseline Characteristics of Deployed Service Members

Variable	Total n = 161 M ± SD or %
Age, years	36.0 ± 8.1
Branch of service	
Army	23.0
Army Guard/Reserve	22.4
Navy	34.8
Naval Reserve	2.5
Air Force	7.5
Air Guard/Reserve	1.2
Marines	8.7
Marine Reserve	0.0
Class	
Non-commissioned officer	45.3
Commissioned officer	26.1
Senior NCO	20.5
Junior enlisted	6.8
Warrant officer	1.2
Years in military	12.6 ± 7.5
Deployment	
Months into deployment	3.3 ± 2.7
Deployments ever, number	3.4 ± 2.6
OEF/OIF/OND deployments, number	2.0 ± 1.7
Previous deployments, number	1.4 ± 2.1
Injured	19.9

Note: OEF/OIF/OND = Operation Enduring Freedom (Afghanistan)/ Operation Iraqi Freedom/Operation New Dawn (Iraq)

Table 3. Baseline Communication Methods While Service Member Deployed (N = 161)

Communication Methods	Total Using %	Usage M ± SD	Moderately or Very Satisfied Using Method %
Email	91.9	3.3 ± 0.8	87.2
Phone calls	90.7	2.8 ± 0.9	84.2
Video conferencing	74.5	2.7 ± 1.0	77.5
Social networking site	62.7	2.8 ± 0.9	78.2
Letters	60.9	1.9 ± 0.8	66.3
Instant messaging	49.1	3.0 ± 0.9	86.1
Text messages	48.4	3.1 ± 1.0	82.1
Other method	6.2	2.0 ± 1.1	90.0
Blogging	1.9	2.7 ± 1.2	0.0

Note: For Usage scale, 1 = at least once every few months, 2 = at least once per month, 3 = at least once per week, 4 = at least once per day. Other methods of communication included sending packages and flowers.

Table 4. Decision Making When Service Member (SM) Home and Deployed

Decisions	Spouse Decides n (%)	Decide Together n (%)	SM Decides n (%)	*p*-value[a]
Minor household, n=158				≤ .001
Home	40 (25.3)*	92 (58.2)*	26 (16.5)*	
Deployed	123 (77.8)	30 (19.0)	5 (3.2)	
Major household, n=149				≤ .001
Home	9 (6.0)*	123 (82.6)*	17 (11.4)	
Deployed	53 (35.6)	86 (57.7)	10 (6.7)	
Financial, n=160				≤ .001
Home	51 (31.9)*	83 (51.9)*	26 (16.3)	
Deployed	95 (59.4)	48 (30.0)	17 (10.6)	
Children, n=125				≤ .001
Home	35 (28.0)*	89 (71.2)*	1 (0.8)	
Deployed	98 (78.4)	27 (21.6)	0	

[a] *p*-values estimated by McNemar's chi-square test * Bonferroni-adjusted difference of proportions (home vs. deployed) test significant at .05 level.

Supporting Spouses of Service Members During Deployment

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Abstract

Deployment can have negative consequences for military spouses. Spouses/significant others of service members who were deployed overseas (n = 161) randomized into two study arms. Telephone support groups met 12 times during six months. Twelve on-demand education webinar sessions covered the same topics. During six months, participants in both arms improved significantly for all outcomes of resilience, depression, anxiety, and coping behaviors. Benefit was attributed to support, self-efficacy, improved coping and stress management skills, and resources. Findings suggest multiple avenues can be used to provide support, coping strategies, and resources to help military spouses cope with disruption and change during deployment.

KEYWORDS

Telephone support, deployment, online education, military, families, spouses, learning and skills acquisition - cognition

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Effects of deployment can be both positive (Huebner, Mancini, Bowen, & Orthner, 2009) and negative for military spouses. Benefits can include becoming more independent, having time and space to develop interests, and the satisfaction of accomplishing tasks and surviving the separation (Drummet, Coleman, & Cable, 2003). Negative effects can include a variety of emotional, deployment related, and general life event stressors. Spouses may be stressed by pragmatic concerns including assuming the role of single-parent, learning new skills such as home and car repairs, making decisions alone, and lack of communication with the absent service member (Tollefson, 2008).

Spouses' reactions to deployment have included emotional distress, loneliness, dysphoria, anticipatory fear or grief, somatic complaints, and depression (Palmer, 2008). For example, wives of active-duty service members deployed to Iraq or Afghanistan had higher levels of stress and somatic symptoms than wives of non-deployed service members (Burton, Farley, & Rhea, 2009). For Operation Desert Storm spouses, loneliness, financial insecurity, and children's discipline were identified as stressors (Rosen, Durand, & Martin, 2000).

Stress deployment symptoms differ by gender. Both men and women report significant distress and a sense of having no control over the outcome. Women report more anxiety, trouble sleeping and eating, and continual states of nervousness; men report anger, repressed feelings and avoidance, and alcohol use (Demers, 2009).

Perceptions of spouses' ability to cope with deployment stressors are correlated to tangible social support from community and military (Rosen et al., 2000; Spera, 2009), specifically the unit and unit leadership (Pittman, Kerpelman, & McFadyen, 2004). Suggested coping strategies include how to deal with deployments and reunions, including the culture shock of return, changes in family members, identifying and dealing with psychological symptoms, positive outcomes of deployment, and available support resources (Booth et al., 2007). However, families frequently do not participate in formal programs (Dandeker, French, Birtles, & Wessely, 2006; Di Nola, 2008) and Reserve and Guard families and those of military personnel assigned as individual augmentees to fill out a unit other than their own are less likely to have access to military resources or to have support from other military spouses (Burrell, Durand, & Fortado, 2003).

This study investigated whether support, coping strategies, and resources could be provided to spouses of deployed service members. It compared two distance interventions, one by telephone and one online. Both were designed to help spouses cope with disruption and adapt to change during deployment.

Methods

This study was a three-year randomized clinical trial, April 2012 to March 2015, funded by the Department of Defense (DoD) Defense Health Program and managed by the US Army Medical Research and Materiel Command (USAMRMC), Military Operational Medicine Research Program. Participants

were spouses/significant others of overseas deployed service members. Recruitment was through online materials, social media, and contact with military installations.

The study was conducted under the oversight of VA Medical Center (VAMC) Memphis Institutional Review Board (IRB) and USAMRMC Human Research Protection Office. After screening, a consent form was mailed to the potential participant for an informed consent call, followed later by baseline data collection. Randomization occurred after baseline data collection.

Interventions

Two interventions were tested – telephone support groups and online education webinars. Both interventions were designed to help spouses build internal and relational assets that have been shown to promote positive deployment adjustment (Orthner & Rose, 2003) and the topics and content of the two interventions were the same. Both were based on an individual stress/health process model (Lazarus & Launier, 1978). Individuals appraise their ability to cope with challenges based on their abilities and available resources. If the appraisal is negative, stress and consequent negative physical and emotional effects may occur. This model provides multiple pathways to intervene to mitigate or circumvent negative consequences with intervention components of education, support, and skills.

Telephone Support Groups. Hour-long telephone support groups with a trained Group Leader met twice a month for six months for twelve sessions. Group membership was open so that group members could start at any point in the cycle, with an average of 6 members in a group at any one time. The groups were structured with suggested scripted talking points, but also participant centered to incorporate participant input and direction of discussion. Groups provided information about deployment, its effects, and coping strategies to combat negative effects. Coping strategies including communication strategies, problem solving, cognitive reframing, and stress management were taught and practiced during each session. At the end of each group session, participants made a commitment to try at least one strategy before the next session; the success of these commitments was evaluated at the beginning of the next session, with modification if needed. During each activity, participants provided support, encouragement, and practical advice to each other. Each participant had a Spouse Workbook that provided materials for the twelve sessions, including problem solving, communication styles and assertive communication, finding help, financial and legal issues, emotional adjustment, resilience, stress management techniques, taking care of self, relationship dynamics, role negotiation, and changes with deployment. Each of the twelve chapters had worksheets for spouses to practice skills and a commitment form.

Education Webinars. The twelve online education sessions during six months had the same topics as the support groups, although they were shorter, 30 minutes, and did not include group participation. Each was online for participants to view for two weeks, to correspond to the time between

support group sessions. Information and skills were highlighted in each recorded didactic presentation that included slides. Education participants also received the Spouse Workbook.

Data Collection and Variables

Quantitative data were collected by trained interviewers at baseline and 6 months by telephone. Qualitative data about benefit were collected at study end.

Outcomes. Outcomes were change in scores for resilience, depression, anxiety, and coping. The Connor-Davidson Resilience Scale (CD-RISC) 25 items examine how respondents felt during the last month, with item responses ranging from 0 (*not true at all*) to 4 (*true nearly all of the time*) (Connor & Davidson, 2003). Higher scores reflect greater resilience.

The Patient Health Questionnaire (PHQ-9) was used to assess depression (Kroenke, Spitzer, & Williams, 2001). The PHQ-9 has 9 items based on the DSM-IV depression diagnostic criteria that are scored from 0 (*not at all*) to 3 (*nearly every day*). Depression is characterized by summed scores of 0 to 4 (minimal), 5 to 9 (mild), 10 to 14 (moderate), 15 to 19 (moderately severe), or 20 to 27 (high/severe). Major depressive disorder is suggested if 5 or more items, one of which must be from the first two items (interest and feeling depressed, the PHQ-2) are scored positive (at least *more than half the days*). Item 9 is counted if present at all (*at least several days*). The General Anxiety Disorder (GAD-7) scale was used to assess anxiety. This 7-item symptoms checklist demonstrates good performance in detecting generalized anxiety disorder, panic disorder, social anxiety disorder, and PTSD (Kroenke, Spitzer, Williams, Monahan, & Lowe, 2007; Spitzer, Kroenke, Williams, & Lowe, 2006). Scoring for each item ranges from 0 (*not at all*) to 3 (*more than half the days*) for a summed score of 0 to 21; higher scores indicate more anxiety.

Fourteen coping behaviors measured how participants managed day-to-day activities, from household tasks to coping with loneliness (Durand, Larison, & Rosenberg, 1995; Pittman et al., 2004). Eight items address personal coping. Six of the items are related to family coping around child care and are only assessed for participants with children in the home. Each item uses a scale from 1 (*very poorly*) to 5 (*very well*); lower scores indicate worse coping. Summed personal coping scores range from 8 to 40 and family coping scores range from 6 to 30. Higher scores indicate better coping.

Independent Measures. Independent measures were selected to characterize the study sample and to assess factors that have potential to impact the outcome measures.

Demographic measures included age; gender; race/ethnicity; marital status; education; years married; relationship to service member; employment status; number of people and children in household; income; whether the spouse had military service; and service member's branch of service, age, rank, time in military, number of deployments, and if injured.

Social support was examined using the Multidimensional Scale of Perceived Social Support (Zimet, Dahlem, Zimet, & Farley, 1988), which has 12 questions focusing on family, friend, and significant other support. Items are scored 1 (*very strongly disagree*) to 7 (*very strongly agree*) and summed to 12 to 84. Higher scores indicate more support.

Personal stress was assessed with items from the Social Readjustment Rating Scale (SRRS), a list of 43 stressful life events that can contribute to illness (Holmes & Rahe, 1967). Thirteen of these events that were apt for this age cohort (e.g., pregnancy or change in financial state) were measured. Occurrence in the last six months is scored as *no* (0) or *yes* (1). Each event has points assigned according to how stressful it is. Points for all events present are summed for a score from 0 to 474; higher scores indicate greater stress.

Stress of military family life was measured by 15 items from the Navy and Marine Stress of Life Index from the Millennium Cohort Study. Participants who had experienced each situation rated how stressful it was on a scale of 3 (*very stressful*) to 0 (*not at all stressful*). Each item is analyzed independently from the others.

Marital relationship was assessed with the Quality of Marriage Index (QMI) (Norton, 1983), a short measure of global relationship satisfaction. A scale is used for rating five of the six QMI items ranging from 1 (*very strongly disagree*) to 7 (*very strongly agree*), with the last QMI item rated on a 10-point scale. Total scores range from 6 to 45, with higher scores indicating more relationship satisfaction.

Participants were asked about the intervention's benefits, usefulness, and relevance and their satisfaction after final follow-up data collection.

Analysis

The chief quantitative data analysis strategy was intention-to-treat, with participants analyzed according to initial arm assignments. Baseline characteristics were compared between participants in each arm using chi-squared or independent t-test, as appropriate. For outcomes, randomized arms were compared using repeated measures mixed linear models to estimate group by time interaction. *P* values $\leq$ .05 were considered statistically significant, and those between .05 and .10 to document trends approaching statistical significance. The study was designed to provide statistical power of 0.80 to document as statistically significant a true population difference in intervention effect equal to at least 0.25 *SD* of a primary outcome variable.

Each qualitative data source was reviewed individually by two staff members. Each reviewer sorted the descriptions, concepts, and central ideas into potential themes and linked themes to verbatim quotes (Bernard, 2006). From these individual findings, a kappa reliability statistic was computed (Cohen, 1968).

Results

Participants

The 161 spouses were predominantly wives (98%), in their mid-30s, as shown in Table 1. On average, they had been married 9 years with 1.6 children. They were well educated (15 years education) and 55% were employed. The majority were Caucasian/White (80%) with 16% being Hispanic/Latina. Clinically, at baseline, their health was good and they had low depression and anxiety, good resilience, and coping skills. Their service members were also in their mid-30s, with 26% National Guard/Reserve and 65% non-commissioned officers (Table 2). During their 3.4 total deployments (including the current one), of which 2 were in Iraq or Afghanistan, 20% had been injured.

- Insert Tables 1 and 2 about here -

Three items were reported most frequently by spouses as military family life stressors: increased time the service member spends away from the family, uncertainty about future deployments, and difficulty balancing family life and military duties (Table 3). When spouses reported which military family life stressors were the most stressful, they reported combat deployments, then increased time service member spends away from family, and then combat related injuries. Only increased time the service member spends away from the family was ranked as one of the top three most frequent and top three most stressful.

- Insert Table 3 about here –

Participants were evenly divided between education arm (n = 81) and support arm (n = 80). Twelve education arm participants were discontinued or lost to follow-up, compared to 7 support arm participants (Figure 1). This difference was not significant.

- Insert Figure 1 about here -

Outcomes and Dosage

During six months, participants in both arms improved significantly for all outcomes, (Table 3). Webinar participants showed significantly more improvement during six months than support participants for anxiety, and there was a trend toward a significant group by time interaction effect for personal coping.

- Insert Table 4 about here –

Dosage had no significant effect on webinar participants (data not shown). With more support group sessions, support participants had significantly improved anxiety ($b = -.39$, $r^2 = .10$, $p = .006$), and trends toward improved resilience ($b = .50$, $r^2 = .05$, $p = .073$), depression ($b = -.26$, $r^2 = .04$, $p = .081$), and personal coping ($b = -.25$, $r^2 = .05$, $p = .052$). Attending 10 support group sessions led to an almost 20% improvement in anxiety score.

Participant Benefit

There was agreement between reviewers in analyzing qualitative benefit themes. For the support group arm, kappa was .84; for the webinar arm, kappa was .89. Several kinds of benefit were reported. Support arm spouses reported support from others; spouses in both arms felt supported by the military because it was providing the study. Improved self-efficacy was also reported by participants in both interventions.

As expected, support was an important benefit for support group participants. Participants appreciated the normalizing of their reactions. As one participant said: "*Enjoyed connecting, knowing I am not crazy for some of the issues taking up real estate in my head.*" Other participants voiced the importance of talking with others who understood what they were going through: "*I actually got to vent out as far as to people who knew what I was dealing with instead of just talking to a friend that either didn't care or they didn't understand.*" Other spouses reported that they had no support at home, so the support groups filled a need: "*I don't have a lot of support here, I'm by myself. I figured it out the whole time while he was gone, which his training was a year and a half, I actually interacted like four times on a human level with other people. … So not having any support at home, it was good to have something*."

Another benefit for participants in both groups was feeling connected to the military and glad that the military cared about the family. As one spouse said: "*It also felt good to know that someone cares about the family left behind. Most resources are for the soldiers, as it should be. It's nice to have resources for us too*."

In discussing benefit other than support for themselves, participants in both arms had similar reactions. Self-efficacy was the most important issue for spouses in both study arms, with spouses focusing on their improved ability in coping skills and managing their stress. Participants in both arms reported that resources and learning stress management and other coping techniques and skills were benefits.

As one webinar spouse said: "*The study really kept me occupied and I learned new things about how to cope. The video sessions, especially what I did, were really helpful. It really did put things in perspective kind of like that book <u>What to Expect When You Are Expecting</u>, it was just kind of a walk through for the deployment*."

Although skills for themselves were important, spouses also used their newly found skills for others. As one webinar participant said: "*It made me feel good to be involved in something like this while my husband was deployed because it meant I could help other people …I taught everybody I know how to do that* [breathing relaxation exercise] . *I even taught my 7 year old the other day*."

However, the webinar participants discussed another type of benefit that was not common for support group participants. Webinar participants discussed the benefit for their husbands, either through

their understanding of their husband's responses or their working with their husbands using what they had learned. Only two support group participants mentioned benefit to their family or husband, but ten webinar participants did so.

These benefits to the service member could be indirect. For some, the benefit to the service member was because the spouse was coping better: *"The study helped me grow in being a better wife for* [husband] *because since he's come home from deployment, our marriage is 10 times better than it ever has been, and I know there's been changes with him too, but I think getting my own help with figuring out life and everything too has helped."* Other spouses reported that the skills they were practicing benefited the service member: "*It taught me how to stay in touch with him even though we weren't together. It gave me great tools to use in order to communicate better with one another instead of just playing the blame game*."

However, spouses also reported a direct benefit for the service members. They did not use the materials only for themselves to improve their relationships, they also involved their husbands: *"Also, it was nice because I could talk to my husband about it as well. So, we would do some of the homework things. We would do them together sometimes. It was helpful for not just me but my husband as well*."

Discussion

Although military families do cope with deployment and the stresses of military life, they may be suffering in silence.

> "*Prior to me doing the webinars, I was really going through some emotional stuff with him being gone. A lot of times, I just wasn't sure how to handle those emotions or what to do, so I was kind of like, really, I had shut myself down as far as I was still able to function, go to work, clean up, but as far as interacting, going out, stuff like that, I basically stayed in the house…*"

In this study comparing two interventions for spouses of deployed service members, both interventions provided benefit. During the six month course of the study, participants in both arms improved significantly in depression, anxiety, resilience, and coping. For anxiety, webinar arm participants had significantly greater improvement than those in the support arm. Similar changes were documented for personal coping, but the trend for personal coping did not attain statistical significance. For support group participants, more sessions attended were associated with significantly improved anxiety and trends toward improved resilience, depression, and personal coping. In qualitative data, participants in both arms reported improved self-efficacy and feeling supported and cared for by the military, which was providing this resource to them, and support group participants reported that connecting with others was a benefit.

Lack of participation in the intervention was a study limitation that may have influenced results. Ten participants in each arm attended no sessions.

Content and topics for both interventions were the same and were designed with the goal of helping spouses cope with deployment. Spouses in previous studies requested that the primary focus be more on their well-being than on that of the service member. Strategies targeted activities that would benefit the spouse directly, such as stress management and taking care of self. Others benefited the couple jointly, such as role negotiation and communication. One spouse said she helped her husband with skills she had learned: "*And, it also taught me what to expect when he came back. And, it helped me help him cope with his feelings when he came back.*"

For the Support arm participants, time was a concern because the groups were at set times, and it was sometimes difficult to dial into sessions. The Webinar participants, who could watch the presentation at will, wanted more interaction and more information.

Spouse responses and comments suggest dissemination strategies that would meet the needs of busy spouses who want to connect. For many spouses, support is not available: "*So the first two deployments to Iraq and Afghanistan, it was kind of like you're on your own… So this deployment, I really felt supported…*" Telephone or telehealth real-time support groups are a reasonable option, depending on staff availability. However, webinars for on-demand viewing to be paired with a Spouse Workbook and some form of interaction (e.g., monitored chat on line) would be desirable to spouses and relatively simple for agencies to provide without excessive staff burden. Online sessions with interaction could provide components spouses reported were important to them, including information, skills building, support from and interaction with others, and flexibility to access information when needed and at will. These types of supported online sessions could fill a critical need for spouses during deployment and ease the transition between deployment and home.

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Table 1. Baseline Characteristics of Spouses of Deployed Service Members

Variable	Total n = 161 M ± SD or %	Support n = 80 M ± SD or %	Webinar n = 81 M ± SD or %	*p*-value[a]
Demographic				
Female	97.5	97.5	97.5	>.99
Age, years	35.6 ± 8.2	35.6 ± 8.4	35.5 ± 8.1	.91
Years married	8.6 ± 7.3	8.8 ± 7.1	8.4 ± 7.5	.77
Years cohabitated	9.3 ± 7.3	9.5 ± 7.1	9.2 ± 7.5	.79
Children, number	1.6 ± 1.2	1.5 ± 1.2	1.7 ± 1.2	.39
Race				.80
White	79.5	78.8	80.2	
Black	8.1	10.0	6.2	
Native American	1.9	2.5	1.2	
Asian/Pacific Islander	3.7	2.5	4.9	
Other	6.8	6.3	7.4	
Ethnicity, Hispanic/Latina	15.5	18.8	12.3	.26
Education, years	15.2 ± 2.2	15.1 ± 2.2	15.3 ± 2.3	.58
Employed, full-time or part-time	55.3	56.3	54.3	.81
Household income, monthly	6505 ± 7717	7327 ± 10525	5709 ± 3092	.24
Military service	14.9	15.0	14.8	.97
Clinical				
General health (0-4)	2.5 ± 0.8	2.6 ± 0.9	2.5 ± 0.8	.67
Depression (0-27)	6.1 ± 5.0	5.5 ± 4.3	6.6 ± 5.5	.17
Major Depression	11.8	5.0	18.5	.008
Anxiety (0-21)	6.6 ± 4.8	6.0 ± 4.4	7.3 ± 5.2	.08
Quality Marriage Index (6-45)	38.0 ± 7.7	38.1 ± 8.4	38.0 ± 7.0	.98
Social support (12-84)	59.6 ± 16.7	60.9 ± 17.4	58.3 ± 16.1	.34
Personal coping (8-40)	32.8 ± 4.3	33.0 ± 3.8	32.5 ± 4.6	.48
Family coping (6-30)[b]	26.1 ± 3.6	26.2 ± 3.2	26.1 ± 3.9	.97
Social readjustment (0-474)	149.2 ± 86.0	162.9 ± 85.6	135.7 ± 84.7	.04
Resilience (0-100)	75.7 ± 11.6	75.4 ± 11.5	75.9 ± 11.8	.80

Note: Depression = PHQ-9, Anxiety = GAD-7, Social readjustment = SRRS, Resilience = CD-RISC

[a] *p*-values estimated by independent samples t-tests or chi-square tests comparing Support and Webinar study arms.

[b] Total n = 102 and n = 49 and 53 for Support and Webinar respectively. This scale is only assessed with participants who have children living in the home.

Table 2. Baseline Characteristics of Deployed Service Members

Variable	Total n = 161 M ± SD or %	Support n = 80 M ± SD or %	Webinar n = 81 M ± SD or %	*p*-value[a]
Demographic				
Age, years	36.0 ± 8.1	36.0 ± 8.3	36.0 ± 8.0	.95
Branch of service				.12
Army	23.0	30.0	16.0	
Army Guard/Reserve	22.4	20.0	24.7	
Navy	34.8	32.5	37.0	
Naval Reserve	2.5	5.0	0.0	
Air Force	7.5	5.0	9.9	
Air Guard/Reserve	1.2	0.0	2.5	
Marines	8.7	7.5	9.9	
Marine Reserve	0.0	0.0	0.0	
Class				.61
Non-commissioned officer	45.3	46.3	44.4	
Commissioned officer	26.1	23.8	28.4	
Senior NCO	20.5	21.3	19.8	
Junior enlisted	6.8	8.8	4.9	
Warrant officer	1.2	0.0	2.5	
Years in military	12.6 ± 7.5	12.2 ± 8.0	13.1 ± 7.1	.47
Deployment				
Months into deployment	3.3 ± 2.7	3.1 ± 2.1	3.4 ± 3.2	.47
Deployments total, number[b]	3.4 ± 2.6	3.5 ± 2.3	3.4 ± 2.9	.82
OEF/OIF deployments, number	2.0 ± 1.7	2.0 ± 1.5	2.1 ± 1.8	.54
Previous deployments, number	1.4 ± 2.1	1.5 ± 2.0	1.3 ± 2.2	.46
Injured	19.9	22.1	17.7	.50

[a] *p*-values estimated by independent samples t-tests comparing Support and Webinar study arms.
[b] Includes current deployment

Table 3. Baseline Stress of Military Family Life Questions

Variable	n[a]	Moderately or Very Stressful %
All Military		
Increased time SM spent away from fam/friends to perform duties	158	75.3
Uncertainty about future deployments/assignments	155	60.6
Difficulty balancing family life and SM's military duties	146	52.7
Intensified training schedule for SM	143	66.4
Non-combat deployment/assignment with SM away from home	143	65.0
Combat deployment/assignment for SM	142	87.3
Family conflict over whether SM should remain in military	104	42.3
Permanent change of station (PCS)	87	64.4
Non-combat injury to SM from carrying out duties	49	59.2
Caring for your ill, injured, disabled SM	33	57.6
Combat-related injury to SM	22	72.7
Guard and Reserve Only		
Change in family financial situation due to SM's active duty	79	36.7
Concern over SM's employment when deactivated	72	52.8
Unpredictability of when SM will be activated for duty	71	64.8
Concern over continuity of access to healthcare for family	71	46.5

Note: Stress of Military Family Life questions are from the Navy and Marine Stress of Life Index; SM = Service Member.

[a]n = number of spouses reported to have experienced situation

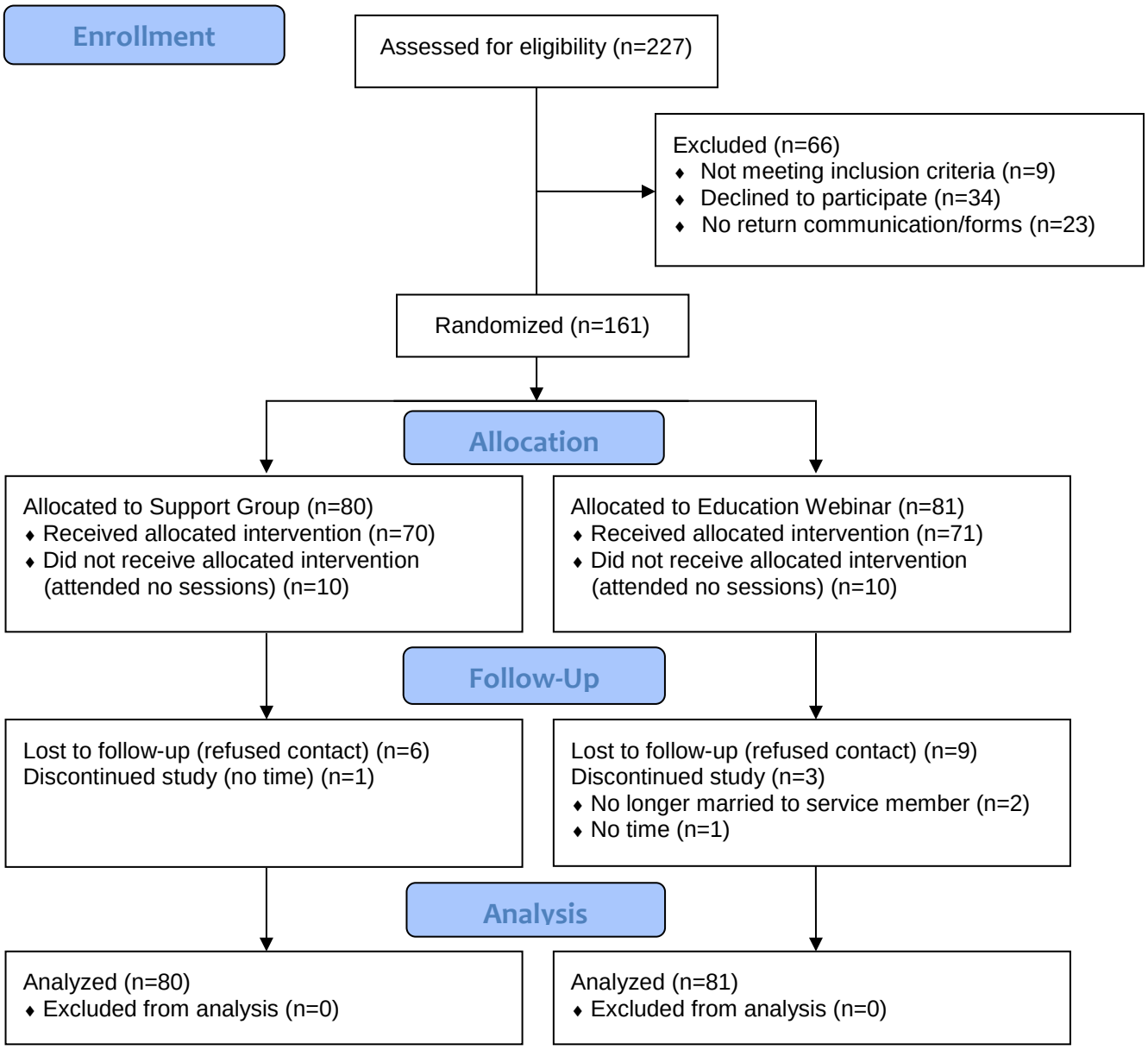
Table 4. Mixed Model Analysis of Outcome Variables

Variable	Baseline n = 161 M ± SD	6 Months n = 137 M ± SD	Group *p*-value	Time *p*-value	Group by Time *p*-value
Anxiety (0-21)			.494	<.001	.032
Support	6.0 ± 4.4	5.4 ± 5.1			
Webinar	7.3 ± 5.2	5.0 ± 4.8			
Depression (0-27)			.376	<.001	.198
Support	5.5 ± 4.3	3.8 ± 4.4			
Webinar	6.6 ± 5.5	3.9 ± 4.2			
Resilience (0-100)			.342	<.001	.180
Support	75.4 ± 11.5	78.3 ± 9.4			
Webinar	75.9 ± 11.8	81.0 ± 10.2			
Personal Coping (8-40)			.773	<.001	.075
Support	33.0 ± 3.8	34.5 ± 4.0			
Webinar	32.5 ± 4.6	35.4 ± 4.2			
Family Coping[a] (6-30)			.180	<.001	.128
Support	26.2 ± 3.2	26.8 ± 3.3			
Webinar	26.1 ± 3.9	27.9 ± 2.4			

Note: Anxiety = GAD-7, Depression = PHQ-9, Resilience = CD-RISC, Personal and Family Coping questions from the 1991-1992 Survey of Army Families II in USAR-EUR.

[a] Family Coping is only assessed with participants who have children living in the home. n = 102 and 93 at baseline and 6 months respectively.

Figure 1.


Enrollment
Assessed for eligibility (n=227)
Excluded (n=66)
♦ Not meeting inclusion criteria (n=9)
♦ Declined to participate (n=34)
♦ No return communication/forms (n=23)
Randomized (n=161)
Allocation
Allocated to Support Group (n=80)
♦ Received allocated intervention (n=70)
♦ Did not receive allocated intervention (attended no sessions) (n=10)
Allocated to Education Webinar (n=81)
♦ Received allocated intervention (n=71)
♦ Did not receive allocated intervention (attended no sessions) (n=10)
Follow-Up
Lost to follow-up (refused contact) (n=6)
Discontinued study (no time) (n=1)
Lost to follow-up (refused contact) (n=9)
Discontinued study (n=3)
♦ No longer married to service member (n=2)
♦ No time (n=1)
Analysis
Analyzed (n=80)
♦ Excluded from analysis (n=0)
Analyzed (n=81)
♦ Excluded from analysis (n=0)